

PERMIT APPLICATION: NRS #04-266

APPLICANT: White Lake Waterfowl LLC
713 Melpark Drive
Nashville, TN 37204
(615) 385-4422

LOCATION: North of the Tennessee Wildlife Resource Agency (TWRA) White Lake Refuge, west of Running Reelfoot Bayou and north of the Obion River; Dyer County.

WATERSHED DESCRIPTION: The surrounding area is primarily agricultural to the north, wooded wetland to the east and west and the White Lake Refuge to the south and east. The wetlands are forested and comprised of various wet oak species as well as sugarberry, American elm, sugar maple and sweetgum. Ground cover is sparse.

PROJECT DESCRIPTION: The applicant proposes to construct a waterfowl impoundment (green tree reservoir; GTR) consisting of 87.40 acres. A low terrace will be constructed around a single cell with maximum heights of 36-inches and average of 18-inches. The western side of the terrace will have a 12-foot wide top while the remaining will have 10-feet. The average bottom widths will range from 18.68 feet on the west to 16.76 feet on the remaining. Terraces will be seeded with native grasses as recommended by TWRA.

Borrow material will be excavated from the entire outside perimeter of the single cell. It is expected that the ditch will aid in alleviating possible ponding affects on the adjacent TWRA property. In addition, a flowage easement of 29.88 acres will be established on the north side of the cell and below the existing terrace of the non-wetland area. After construction of the cell, if ponding areas are noted on the eastern side of the cell or if flowage needs to be improved, drop-board structures shall be constructed in those areas and on the opposing terrace.

One well will be established in the non-wetland area as a supplemental water source. Water will be pumped underground to the constructed cell.

The applicant proposes to manage the project under the following guidelines:

- (a) The aeration of the impounded waters will occur at least once during the impoundment period by the manipulation of water levels.
- (b) The GTR will remain dry every third year and in a ten-year cycle for at least two consecutive years. Other conditions may apply
- (c) The water control structures shall be closed no **earlier** than 10-14 days prior to beginning of winter duck season of each

year (not before late November) and opened for de-watering within days after close of the season or no later than the first of February. If duck season closing dates are earlier then de-watering shall begin at least 2 days after closing of the season

- (d) The applicant shall implement an aggressive annual beaver control program that involves both the removal of the animal and/or its structures within the permitted area. An inspection timetable shall be submitted with the annual monitoring report describing when the applicant inspected for beaver obstruction, findings and actions taken.
- (e) The impounded area shall be monitored annually beginning with a comprehensive pre-impounded ground cover and understory species listing initiated no later than six months prior to beginning of construction of the low terrace authorized by this certification provided that monitoring during the spring/ summer season shall occur prior to the beginning of construction of the low terrace. This monitoring shall include wetland indicator status, dbh of saplings and percent dominance. This and subsequent reports shall also document existing regeneration (species, abundance, dominance), existing tree mortality, percentage of dead snags and observation of chlorosis. Water depths, sediment deposits or soil saturation shall also be measured. Information shall be gathered at fixed sampling plots for quantitative vegetational data and along meandering transects for general observations. At least two vegetative sampling plots will be established at the location of the hydrological monitoring wells.
- (f) The applicant will place at least two (2) RDS WL 20 or similar model hydrological monitoring devices within the GTR.
- (g) These devices shall be installed no later than six (6) months prior to beginning of construction of the low terrace authorized by this certification; provided, however, that installation shall have taken place such that monitoring during a spring/summer season shall occur prior to the beginning of construction of the low terrace. Hydrological data shall be recorded from these devices monthly for the first year. After that, if agreed to by TDEC and the COE, then quarterly for the duration of the term of this certification. The purpose of this monitoring shall be to determine if prolonged soil saturation or inundation occurs as a result of artificial impoundment or due to the inability to completely de-water the area. These reports shall be

submitted to the COE and this office. If the reports indicate prolonged or abnormal soil saturation or inundation of these soils during the growing season (March 1 through mid October) sufficient to cause changes as outlined in conditions of the certification then remedial actions must be undertaken. Corrective measures may include the removal of water control structures and the terraces/levee, but such will not be required if lesser measures/actions will suffice.

- (h) At least two sampling events (late spring and summer) shall occur annually for the first three years. After review, reporting may occur once annually for the remaining two years. Each monitoring report shall include items that are required for verification in conditions of the permit. In addition, each report shall include data and analysis on all items listed in certain conditions. The first monitoring report is a pre-impoundment report that shall be due no later than six (60 months after completion of construction of the low terrace. If the pre-impoundment data provides rationale for the suspension of impoundment for a certain time period then the division will suspend implementation for such time as warranted.
- (i) If a 30% or larger change in density, percent cover or species composition occurs in vegetative ground coverage or greater than 30% shift in one wetness indicator to another in dominant groundcover and understory species or noticeable indicators of flooding stress such as a 30% increase in dead snags or in chlorosis, or a 10% increase in tree or understory mortality in any vegetative community the applicant will immediately suspend impoundment activities. The applicant, Division and the COE shall conduct an analysis to determine the cause and necessary remedial actions.

The construction of the terrace and borrow ditch will impact 6.59 acres (borrow ditch will be 3.36 and terraces 3.23 acres).

These proposed wetland impacts will be mitigated at a 63.5 acre parcel west of Cold Creek along Jack Rabbit Road in Lauderdale County that lies adjacent to the Sunk Lake Natural Area. The site is composed of 39.5 acres under cultivation and 24.0 acres of wooded wetland (cypress/tupelo). Of this amount 34.5 acres are suitable for compensatory wetland mitigation. The applicant proposes to utilize 13.18 acres. Various hydrological modifications will be made to the man-made and natural swales and drainage features on the site. This will include the removal of existing berms, alterations to reduce the effect of offsite drainage features and the construction of small berms of 8-10 inches in height. The berms will be constructed utilizing a rice plow. The site has already been planted with bottomland hardwood species.

Once the mitigation site is completed and all mitigation credits associated with the mitigation site are used or sold, it will be conveyed to the Tennessee Department of Environment and Conservation, Division of Natural Heritage, and incorporated into the Sunk Lake Natural Area.

The wetland mitigation shall meet the following performance criteria:

- (a) 75% survival rate of planted trees for five (5) consecutive years. Similar mast producing species that volunteer can be included to meet survival rates.
- (b) The restored wetlands must meet or exceed the functional capabilities of the impacted wetlands. (The final year of monitoring shall require a Hydrogeomorphic Assessment). At a minimum the mitigation site must meet 50% coverage of PFOIC standards.
- (c) The applicant proposes to monitor the wetland mitigation area until five (5) consecutive years of success have been met. Twelve permanent sampling points shall be established and at least six sampling points shall correspond with the placement of a hydrological monitoring device.
- (d) Annual reports shall be submitted to this office and the COE with photodocumentation. All remedial actions necessary to meet performance criteria shall be listed with a timetable for completion. Each final annual report shall contain local rainfall data.
- (e) Each report shall contain an herbaceous species listings denoting dominance and wetland indicator status. New species shall be added and highlighted each year.

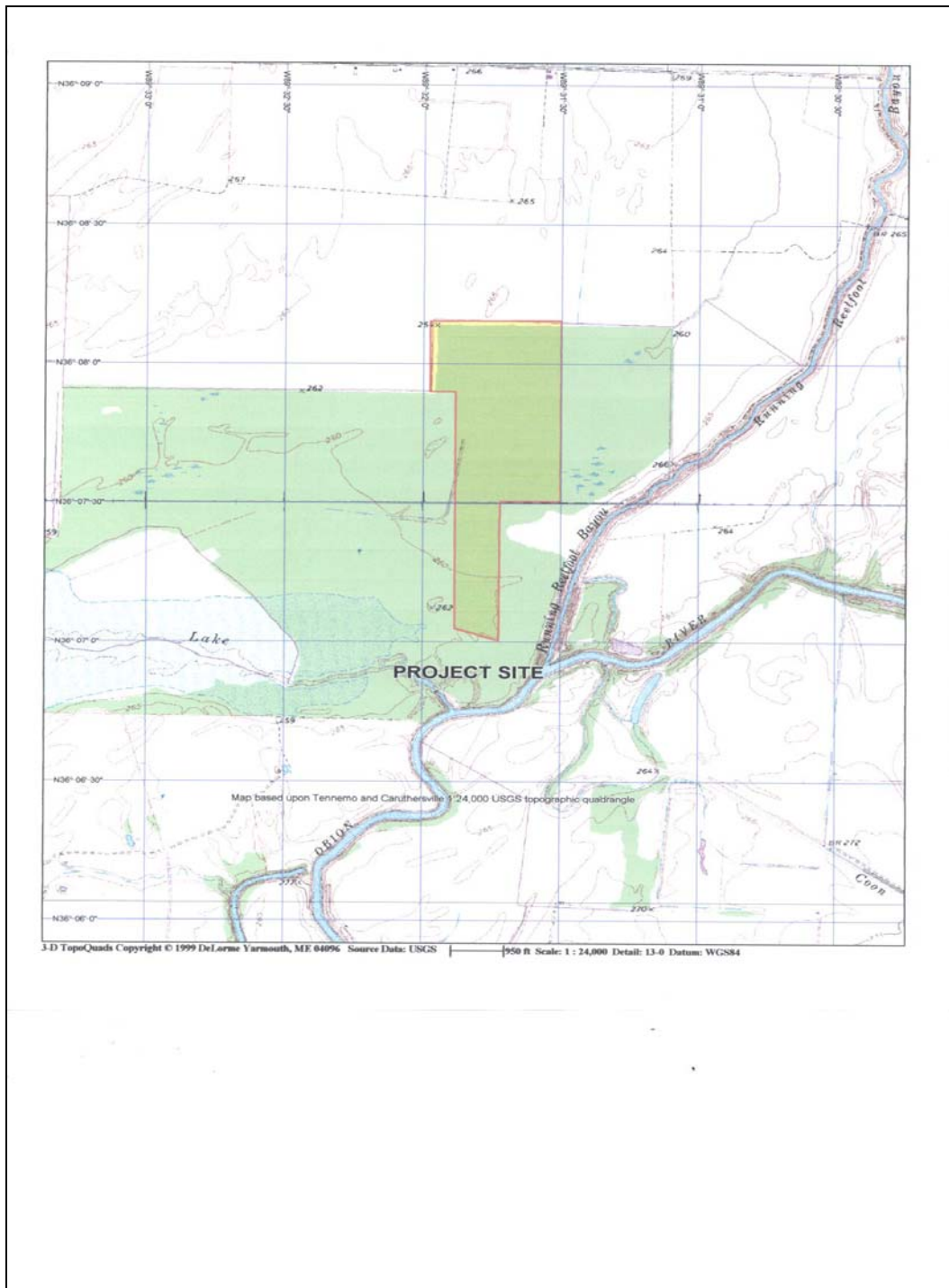
The information gathered from this project shall be used in future permitting decisions by the division on any proposed Green Tree Reservoir (GTR) or similar project, which requires the manipulation of hydrology in a jurisdictional wetland, especially a forested wetland.

The applicant proposes to maintain the GTR in good condition and in conformance with the terms and conditions of any permit. The applicant is not relieved of this requirement if the permitted activity is abandoned. Should the applicant cease to maintain the authorized activity or should it be abandoned without a good faith transfer to a third party, a modification of this certification must be obtained from this office, which may require restoration of the area.

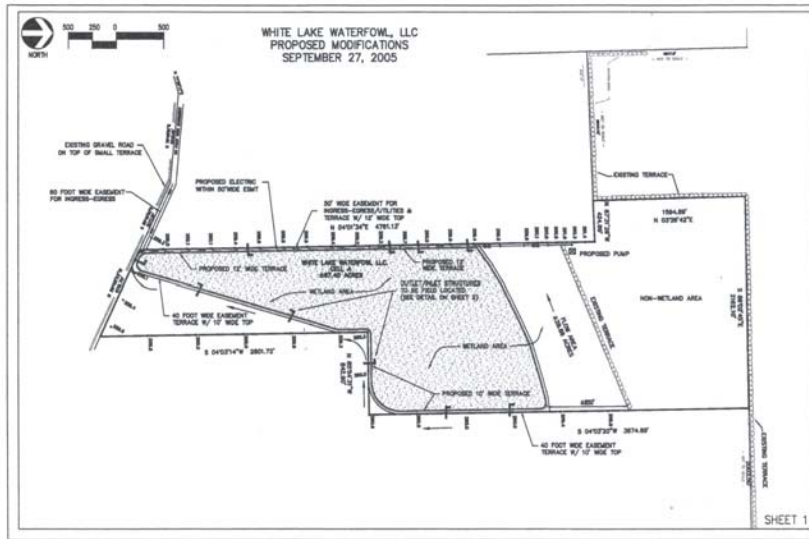
PERMIT COORDINATOR: Mike Lee

TOPOGRAPHICAL QUADRANGLES: Tennemo 412 NE; Caruthersville 412 SE

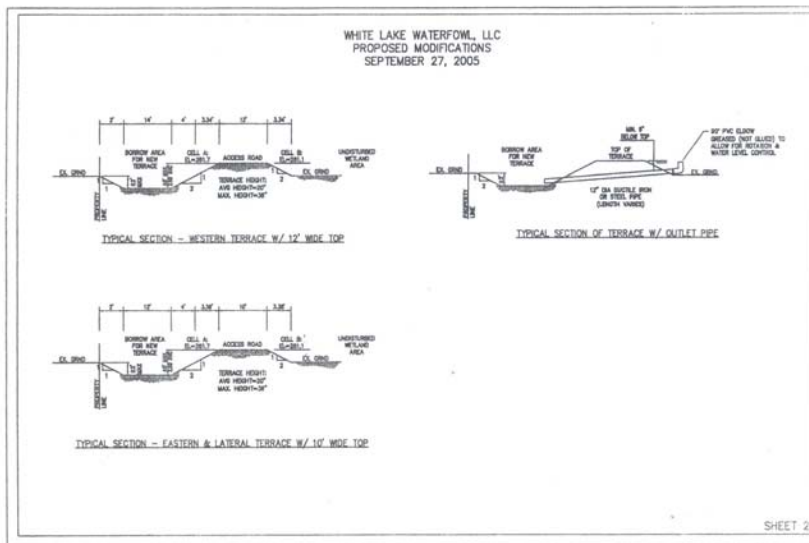
Lat. 36.125 Long. 89.525



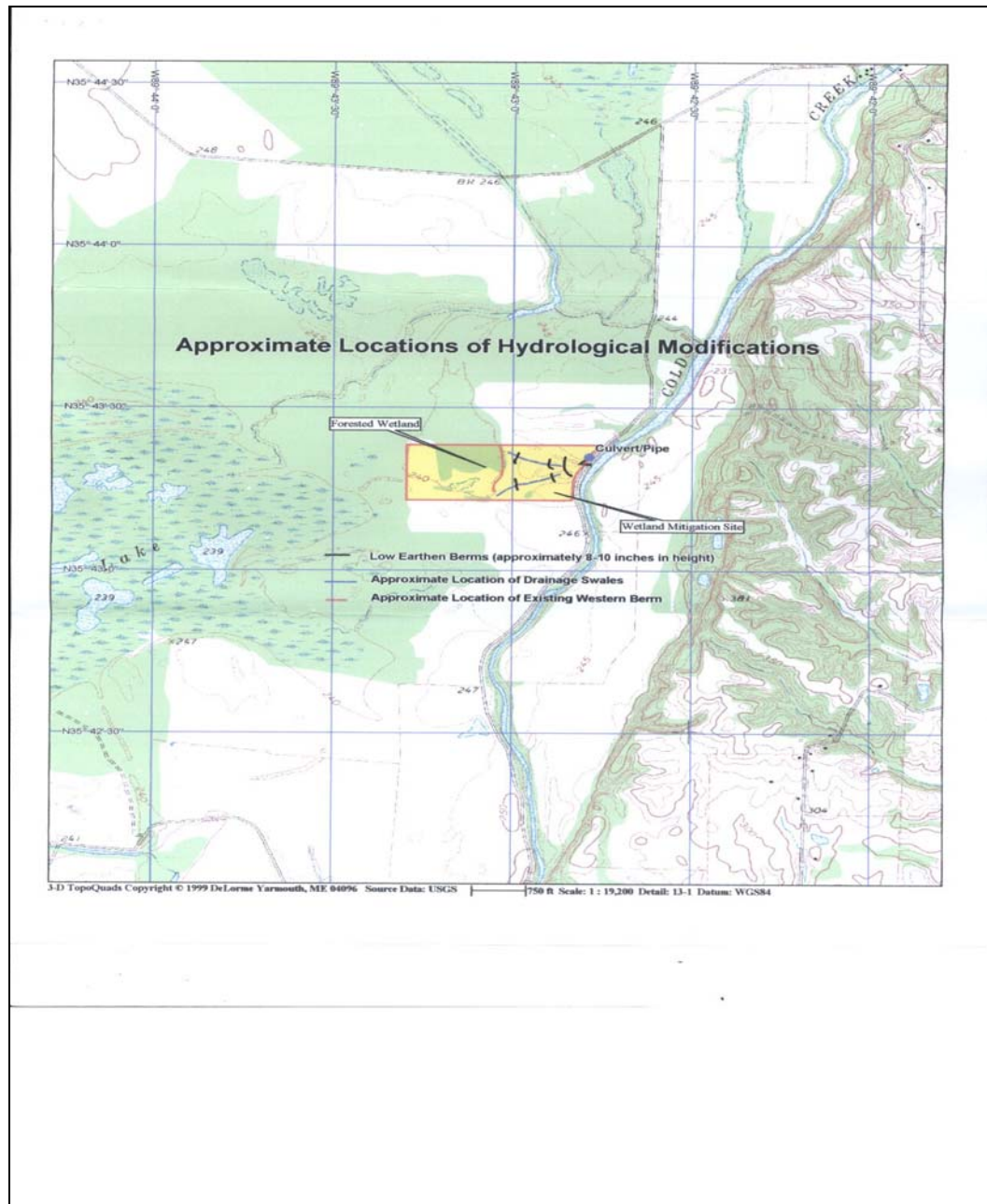
PROPOSED WHITE LAKE WATERFOWL GTR



PROPOSED SINGLE CELL GTR



TERRACE AND BORROW AREA DETAILS



PROPOSED WETLAND MITIGATION SITE